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Vocational self-efficacy and academic motivation levels of technical and vocational pre-service teachers (example of Marmara University)

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Abstract

Low self-efficacy and academic motivation have been adduced for poor performance of students by teachers and educators. Determination of effective factors on vocational self-efficacy and academic motivation levels of technical and vocational pre-service teachers can be useful in order to improve better training programs and academic performance. In this study a group of technical education faculty seniors' vocational self-efficacy and academic motivation levels were studied. The aim of the study was to identify the effective factors on vocational self-efficacy and academic motivation levels of technical and vocational pre-service teachers.

Keywords: Pre-service teacher, vocational self-efficacy, academic motivation.

1. Introduction

Low self-efficacy and academic motivation have been adduced for poor performance of students by teachers and educators. It is observed that pre-service teachers as being seniors of technical and vocational education faculty have similar motivational and vocational self-efficacy problems. Self-efficacy determines how people feel, think, motivate themselves and behave (Bandura, 1994, 1997). Self-efficacy is defined as people's beliefs about their capabilities. Such beliefs produce these diverse effects through four major processes. They include cognitive, motivational, affective and selection processes. Students with low self-efficacy believe that cannot be successful and thus are less likely to make any effort. They consider that challenging tasks as treats that are to be avoided.

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Students with high self-efficacy are more likely to challenge themselves with difficult tasks. They are intrinsically motivated (Bandura, 1993). Motivation is another important issue and studied for years by researchers (McClelland, Atkinson, Clark & Lowell, 1953; Atkinson & Feather, 1964). In this study, motivation is examined within the framework of self-determination theory (Deci, 1975; Deci & Ryan, 1985). According to self-determination theory (Deci & Ryan, 1985), there has been a dialectical relation between people, as innately active organisms, and the social environment. In this theory, humans are assumed to be active, growth-oriented organisms that have an innate desire for stimulation and learning from birth, which is either supported or discouraged within their social environment (Deci & Ryan, 1985; 2000). Within the social environment people attempt to satisfy their three basic needs. These three innate or fundamental psychological needs are competence, autonomy and relatedness (Ryan & Deci, 2000). In this theory; at the end of the interaction between these needs and the environment three specific types of motivation are differentiated: firstly; intrinsic motivation, secondly; extrinsic motivation and thirdly; amotivation. From different kinds of definitions, motivation has been conceptualized with regard to inner forces, enduring traits, behavioral responses to stimuli and sets of beliefs and effects (Evans, 2000). Practically, motivation is also known as academic engagement and is identified as the most influential of all the factors that affect student performance (Francis et al., 2004). A child that is academically motivated wants to learn, likes learning-related activities and improves academically (Cunningham, 2003). Many factors influence the development and use of motivation strategies of students (Ellis & Worthington, 1994; McCaslin & Hickey, 2001; Pintrich & De Groot, 1990; Pintrich, & Schunk, 2002; Renchler, 1992; Winne, 2001; Zimmerman, 1990, 1994, 2001). One such factor is the student's perception of themselves as being intrinsically or extrinsically motivated to engage in learning activities within educational environments (Barron & Harackiewicz, 2001; Elliot & Thrash, 2001). Aksan and Koçyiğit (2011) studied with a group of Turkish students and they found that self-efficacy levels of students were very low. From this result, it can be implied that the students also have academic motivation problems. In another study, Turkish teachers and school counselors reported that low academic performance, motivational problems and test anxiety are very common in today's classrooms (Uzbaş, 2009). It is observed that pre-service teachers (seniors of technical education faculty) have also similar problems. Unwillingness, low expectation for the future and low motivation were very common among pre-service technical teachers. A group of seniors expressed themselves that they do not feel ready for the teaching profession. Such kinds of data demonstrate a need to examine pre-service teachers' self-efficacy and motivational problems. The aim of this study is to examine the impacts of demographic factors on pre-service teachers' self-efficacy and academic motivation levels. It may contribute to perform an integrated study with all the possible basic factors which affects self-efficacy and motivation.

2. Method

2.1. Participants

In this work, study group of this research consisted of 404 seniors (pre-service teacher) from Technical Education Faculty of Marmara University, Istanbul, Turkey. Data were gathered within two semesters; 2011-2012, autumn and spring. All group consisted of seniors. Participation was arranged voluntarily, with informed consent in the classroom environment. Students were recruited without regard to gender. Instructions were read aloud by trained proctors before students began responding. Sufficient time was provided for all students to complete each instrument.

Table 1. The democratic characteristics of Participants

		Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Female	233	57,7	57,7	57,7
	Male	171	42,3	42,3	100,0
	Total	404	100,0	100,0	

	19-21	68	16,8	16,8	16,8
	22	129	31,9	31,9	48,8
Age	23-25	177	43,8	43,8	92,6
	26	30	7,4	7,4	100,0
	Total	404	100,0	100,0	
	Textile teacher	303	75,0	75,0	75,0
Field	Computer teacher	101	25,0	25,0	100,0
	Total	404	100,0	100,0	

Average age was 22 (range=19-35, mean=22.93, Std. dev. =1.89, min. =19, max. =35). 43% of the participants were male and 57% were female. 25% were computer pre-service teacher and 75% were computer pre-service teachers as can be seen in Table 1 above.

2.2. Measures

A twelve item questionnaire was used to gather demographic variables. This questionnaire included questions relating to age, gender, and field, academic achievement level, whether he/she was happy from his /her school and whether the school was chosen by himself/herself or not. Academic achievement levels of students' were assessed via a self- determination question. Additionally, a self-efficacy scale for computer teachers', a self-efficacy scale for textile teachers' and an academic motivation scale were used in this study. Totally, test sets consisted of two scales and one questionnaire for each participant.

2.2.1. Teacher Self-Efficacy Scale (TSES)

Pre-service teacher self-efficacy scale assessed via two different Turkish scales in this study. One of them was originally developed for computer education department's seniors (Akkoyunlu, Orhan & Umay, 2005). Second form adapted from this original form for textile education department's seniors by researchers. The scale consists of 12 items. Responses were based on a five-point scale from 1 (never) to 5 (almost always). Students were asked to indicate the degree to which they agreed with the statements, for example, "I feel myself adequate to motivate my uninterested students for courses in classroom". Cronbach's alpha for this sample was 0.79 (N=404, n=12) in this study.

2.2.2. Academic Motivation Scale (AMS)

The AMS (Vallerand et al., 1992; 1993, Ünal-Karagüven, 2012) consists of 28 items and seven subscales. The AMS was developed within the framework of self-determination theory (Deci & Ryan, 1985). The scale is divided into seven subscales, reflecting one subscale of a motivation, three subscales of intrinsic motivation and three subscales of extrinsic motivation. Seven subscales names; Motivation to Know (IMTK), Intrinsic Motivation to Accomplish (IMTA), Intrinsic Motivation to Experience Stimulation (IMES), Extrinsic Motivation External Regulation (EMER), Extrinsic Motivation Introjected Regulation (EMIN), Extrinsic Motivation Identified Regulation (EMID) and Amotivation (AMOT). The items are rated on a seven-point scale, ranging from 1 (does not correspond at all) to 7 (corresponds exactly). Examples for the items; "Because I experience pleasure and satisfaction while learning new things." and "I don't know; I can't understand what I am doing in school". Only five subscales were used in this study, these were; IMTK, IMTA, EMIN, EMID and AMOT. Each subscale consists of four items; thus, subscale scores can range from four to twenty-eight. A high score on a subscale indicates high endorsement of that particular aspect of academic motivation. College version of the AMS was used in this study. Cronbach's alpha was 0.89 (N=404, n=28) for this group.

3. Findings

Table 2 presents, sample sizes, means, standard deviations and inter correlations among variables used in the study. As can be seen in Table 2, all inter correlations among dependent and independent variables are significant and mostly positive. As can be seen in column 7 vocational self-efficacy and academic motivation subscales are positively related. Additionally, as can be seen in Table 2 and column 8, 9, 10 all inter-correlations among five academic motivation subscales are positively significant, except amotivation. Amotivation is negatively correlated with other subscales of academic motivation. All four motivation subscales are significantly and mostly positively correlated with each other.

Table 2. Means, standard deviations and bivariate correlations among variables

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11
1.Gender			1										

2.Age	22	1.89	.326**	1									
3.Field			.500**	.400**	1								
4.Happy			-.007	-.068	.000	1							
5.School			-.027	-.026	.101*	.409**	1						
6.Achievement			-.158**	-.036	-.175**	.161**	.086	1					
7.TSES	47	7.44	-.044	.037	.128*	.240**	.149**	.241**	1				
8.IMTK	19	5.18	-.104*	.039	.055	.237**	.240**	.149**	.399**	1			
9.IMTA	14	4.92	-.109*	.007	-.046	.131**	.078	.227**	.324**	.689**	1		
10.EMIN	19	5.64	-.223**	-.038	-.080	.380**	.287**	.191**	.381**	.651**	.560**	1	
11.EMID	14	5.74	-.148**	-.067	-.081	.053	-.007	.129**	.247**	.418**	.653**	.427**	1
12.AMOT	9	5.54	.356**	.131**	.339**	-.333**	-.182**	-.219**	-.050	-.292**	-.114*	-.405**	.015

*** P≤.001, ** P≤.01, * P≤.05

Hierarchical multiple regression was used to predict vocational self-efficacy, intrinsic motivation, extrinsic motivation and amotivation from six of predictor variables. As it can be seen from the Table 3, vocational self-efficacy and academic motivation subscales are dependent variables. The independent variables are gender, age, field, academic achievement level, whether he/she was happy from his /her school and whether the school was chosen by himself/herself or not.

Table 3. Hierarchical regression analysis for vocational self-efficacy and academic motivation

Variables	TSES Beta	IMTK Beta	IMTA Beta	EMID Beta	EMIN Beta	AMOT Beta
1.Gender	-.119*	-.144*	-.079	-.225***	-.126*	.226***
2.Age	.015	.057	.043	.062	-.015	-.042
3.Field	.228***	.109*	.011	.016	.015	.232***
4.Happy from his/her school	.181**	.170***	.099	.296***	.050	-.298***
5.School chosen by himself	.033	.151**	.020	.153***	-.043	-.083
6.Success	.229***	.102	.181***	.096*	.087	-.090*
R^2	.168***	.143***	.109***	.239***	.060*	.319***

*** P≤.001, ** P≤.01, * P≤.05

Table 3 contains the beta weights. Beta weights provide an appropriate criterion since unlike the percentage of variance (R^2), beta weights do not change when the order of predictor blocks changes. The relative importance of variables in each predictor was determined by examining significant beta. The absolute magnitude of beta coefficients indicates the relative strength of five of six variables as predictors of vocational self-efficacy and academic motivation. Table 3 depicts these results. As seen in Table 3, self-efficacy and academic motivation subscales were separately regressed on six predictor variables. All independent variables are important predictors of vocational self-efficacy and academic motivation levels of pre-service teachers except age. Age is not a significant predictor for the dependent variables statistically. These findings show that; being happy from his/her school a substantially important predictor of vocational self-efficacy and academic motivation, even when other predictors are statistically controlled. It explains a significant amount or increment in vocational self-efficacy and academic motivation subscales.

4. Conclusion

Academic motivation, as it relates to learning, is one of the foremost problems in education. It is regarded as an important subject in the field of educational psychology research. Determination of the factors that affect seniors' academic motivation and vocational self-efficacy levels of technical and vocational pre-service teachers may lead to preventions for raising seniors' academic achievement and vocational self-efficacy levels. Additionally, this can be useful in order to improve better training programs for education faculties. In this study

it was intended to examine the impacts of demographic factors on academic motivation and vocational self-efficacy levels of technical and vocational pre-service teachers with a group of Marmara University, Technical Education Faculty seniors.

Inter-correlations among five academic motivation subscales are positively significant, except amotivation. Amotivation is negatively correlated with other subscales of academic motivation as expected. Amotivation as being opposite of other scales shows low motivation. Therefore, it is negatively correlated with other scales. Multiple regression analysis was performed in order to determine the factors that affect academic motivation and vocational self-efficacy levels of technical and vocational pre-service teachers. Results of the analysis provided clear support that demographic characteristic affects academic motivation and vocational self-efficacy levels. In terms of motivational theory, the motivational profiles of these students seemed to be well captured within the framework of self-determination theory (Deci & Ryan, 1985) by drawing attention to effective factors for academic motivation of students. This study contributes to the literature on motivation and self-efficacy in education. The study confirmed that students' academic motivation have been affected by some factors. Findings provide support for the view that demographic characteristics affect academic motivation and academic performance. These findings were similar with previous study findings. It was found that; motivation for chemistry lesson was a significant predictor of chemistry achievement (Akbaş & Kan, 2007).

In this study, findings also supported that demographic characteristics affect self-efficacy. To gain a greater understanding of the risk factors involved, subsequent studies of academic motivation and self-efficacy should examine different factors not only demographic characteristics. In order to prevent negative psychological effects of motivational problems on school success motivating factors should be used by teachers and parents. The results were also consistent with previous studies' results (Oliver & Simpson, 1988). It was reported that motivation levels of university students are affected by some demographic factors such as; their reason to choose the school, the probability of finding a job after graduation, order of preferences, future expectations, distinctive power of testing and measurement activities at school and their desire to do master degree, probability of finding a job, attitude towards the teacher, social circle, level of income, appropriateness of the classrooms, efficiency of the educational material and number of siblings (Celikoz, 2009). Oner (1990) in her study has showed a significant negative interaction in between average scores of mathematics and general academic achievement with test anxiety scores. Yıldırım (2000) researched the effects of loneliness, test anxiety and social support on academic success and showed that the academic success was predicted by loneliness and test anxiety. Moreover, adequate educational materials (e.g., computer) provide a platform for efficient study at home and can motivate students to study. It should be provided motivating materials such as computer in schools for student use.

Consequently, education faculty seniors' academic motivation and vocational self-efficacy levels are affected by demographic characteristics such as; gender, field, being happy from his/her school, preferred the school by himself/herself and academic success. In other words, demographic characteristics are important factors for vocational self-efficacy and academic motivation levels of technical and vocational pre-service teachers. Although, the relative importance of these factors as predictors, at least for the Turkish students, should not be underestimated.

This study had several strengths and limitations. One of its strengths was the sample size of the study. The use of standardized measures and procedures was other strength. Many of the items included in the questionnaire measuring motivation and self-efficacy were objective situations or actions. The weaknesses were typical of many published studies. Replication with different subjects in order to determine the influence of different contexts on academic motivation and self-efficacy is necessary to increase confidence before generalizing to other populations. Replication attempts should involve different populations, longitudinal designs and appropriate control groups.

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